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BIRDBANDINGPrepared in the Section of Distribution and Migration of Birds
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Historical

Birdbanding, by means of numbered bands, provides a method of studying living birds of all kinds. Scientific banding dates back to 1899, when a Danish schoolmaster, H. Chr. C. Mortensen, commenced systematically to band storks, teals, starlings, and two or three species of birds of prey. His success at once attracted the attention of European ornithologists, and it was not long before the birdbanding work came into prominence. At the present time banding is being actively conducted in North America as well as in England, Finland, Norway, Sweden, Denmark, Russia, Iceland, Germany, Holland, Belgium, France, Switzerland, Hungary, Bulgaria, India, Morocco, and Japan.

In America, the possibilities of the method were first brought to the attention of ornithologists by Dr. Leon J. Cole in 1902, and after the prosecution of a few more or less individual projects and one or two more ambitious attempts, the American Bird Banding Association was organized in December 1909. This organization, with the aid of a few enthusiastic workers, and the Linnaean Society of New York, continued to develop the work until 1920, when, having outgrown the resources available it was taken over by the Biological Survey.

Authorization and Direction

Birdbanding in North America is under the general direction of the Bureau of Biological Survey, United States Department of Agriculture, in cooperation with the National Parks Branch, Canadian Department of the Interior. In the United States the Migratory Bird Treaty Act authorizes this function among other investigations for the protection of migratory birds.

Under regulation 9 of the Migratory Bird Treaty Act Regulations special Federal permits are issued to the volunteer cooperators who do most

of the actual banding. The permits issued are of two degrees, one permitting the holder to trap for banding purposes migratory nongame species only, the other covering all migratory birds. The average "small bird" station obviously does not need the wider authority, which is necessary only when the birds to be banded include ducks, geese, shorebirds, rails, coots, gallinules, doves, and pigeons. Permits for banding in Canada are issued by the Commissioner, National Parks of Canada, Ottawa, Ontario.

Qualifications for Cooperation

The Biological Survey and the Canadian National Parks Branch exercise the greatest possible care in issuing banding permits, and in investigating the qualifications of every applicant, not only for general fitness, but also for ornithological knowledge. That this knowledge is of much importance will be more readily understood when it is realized that many banded birds are subsequently reported by persons who have little acquaintance with the many species, so that absolute dependence must be placed upon the original identification.

One qualification of applicants that is rigidly adhered to is the age limit. Permits are never issued to persons under 18 years of age. The position of the Bureau in this matter is that younger persons are rarely ready for serious ornithological work. Moreover, there is no intention to permit the banding work to become a plaything for juvenile organizations, even when as well sponsored as are Boy or Girl Scout troops or elementary school classes.

Promiscuous banding of fledgling birds is not approved. This is because nest hunting for the purpose of banding the nestlings is likely to result in more harm than good, as evidence has been found that several small predators may follow a human trail, apparently from curiosity. Furthermore, the number of return or recovery records from banded fledglings is disappointingly low. Certain species are excepted, however, including gulls, terns, herons, pelicans, swallows, and other colonial birds that nest where they are virtually safe from natural enemies and that offer unusual opportunities for study by this method through the large numbers that may be easily banded. Operators of trapping stations are also authorized to band the young of any birds that may nest upon the grounds of their stations where natural enemies are kept under control.

During recent years, because of the limitation of funds, few new banding permits have been issued, the policy being to issue permits only when the prospective station fits in with those already in operation, or when the applicant has in mind the conduct of a research program that can be advantageously advanced by birdbanding.

Injuries to Birds

When the banding work was taken over by the Biological Survey in 1920 many persons expressed the fear that the trapping and handling of large numbers of small birds by inexperienced operators would result in a large number of injuries or even in the death of the birds. Lacking definite

data at that time, it was difficult to refute their statements, but now, with nearly two and a quarter million birds marked with the numbered bands, and some of them handled at the banding stations literally hundreds of times over periods of several years, it is possible to assert that injuries or fatalities are so rare as to be negligible. Any bird student qualified to operate a banding station is sufficiently interested in the welfare of bird-life to exercise every precaution to see to it that the subjects of his study are not harmed either by his traps or by his own handling. An injured bird is a loss and scores a failure upon the part of the operator. His success depends upon the liberation of every bird he bands, uninjured in any way and in a normal, healthy condition, to continue its life without handicap, and so be able to return again and again to his and other stations.

In spite of all precautions "accidents will happen", and at rare intervals a bird may be injured or even killed by a trap. Such cases, however, may usually be traced to some momentary carelessness on the part of the operator or to the appearance of an enemy that is quick to take advantage of the captives. Nevertheless, at many stations that have been in operation for several years, literally thousands of small birds have been banded without a single fatality.

Every banding station must be in effect a sanctuary that, in addition to affording protection to the birds attracted to it, produces valuable scientific information about them. Food and water are provided and natural enemies are rigidly controlled. The destruction of stray cats each year at banding stations has saved many times the total number of those birds whose deaths might in any way have been due to the banding work.

The question is sometimes asked: "Aren't the birds frightened away by the trapping?" The best answer that can be given to this inquiry is furnished by the birds themselves, most of which return again and again to the traps, some "repeating" so frequently as to become more or less of a nuisance to the operator. Further evidence is found in the numerous reports from operators concerning the steady increase in the number of birds that not only visit their stations but remain to nest.

Bands

The bands used are made of pure aluminum. Ten sizes are used, ranging in inside diameter from size "0", measuring .083 inch, which is suitable for warblers, kinglets, and other small song birds with slender tarsi, to size 8, which, measuring nearly an inch across, is used for eagles, swans, geese, pelicans, and other large birds. No band is made that is suitable for hummingbirds, the mechanical difficulties for quantity production being impractical of solution. Nevertheless, several of these diminutive birds have been banded and a few have actually been recaptured in subsequent seasons. In such cases the operators have carefully cut down size "0" bands to fit.

The weight of a band of appropriate size is significant compared with the weight of the bird that wears it. The proportional weight of bird and band is comparable to that of a man and his wrist watch.

To prevent self injury on the part of blackbirds, grosbeaks, and other birds with bills powerful enough to crush a band against their tarsus, all bands larger than size 1A are made of fairly thick metal, tempered as hard as possible. This is sometimes a source of annoyance to operators, but all agree that a little more trouble on their part is preferable to injuries to the birds.

On the larger bands the complete legend "Notify Biological Survey, . Washington, D. C.", with the serial number, is stamped on the outer surface. On smaller bands there is room on the outer surface only for the number so the legend is stamped on the inner surface and is abbreviated to "Notify Biol. Surv., Wash. D. C."

Because of the large number of birds banded each year, it is necessary to repeat the numbers and therefore to provide series designations. These letters or figures are important parts of the number. Only a few letters have been used, as "A", "B", "C", etc., as the present system employs the fiscal year of the Federal Government (July 1 to June 30), as "35", "36", etc. A band number with its series designation, is correctly written as A 356728, or 35-641982.

When a banded bird is found the band number should be carefully copied and reported to the Biological Survey, with the date and locality where found. In return, the Bureau will advise the finder as to the species and place and date of banding and at the same time will furnish the details of recovery to the person who did the banding.

Traps

Cage traps of approved types are used to capture birds for banding purposes. Several station operators have shown great ingenuity in working out traps for different kinds of birds. These are carefully tested and if approved are described for the benefit of other stations.

The use of nets, snares, or traps that hold a bird securely are not approved for general use, although occasionally for certain species for which satisfactory cage traps have not been invented, the carefully supervised use of such devices is allowed.

The Survey does not furnish traps or other station equipment. It does, however, supply its cooperators with specifications that may be easily followed even by persons who may be only moderately skilled in the use of tools. In addition, a few station operators are prepared to furnish or make on order almost any kind of trap that has been approved for banding work.

Value of the Work

It is the opinion of professional ornithologists over the entire World that birdbanding is now one of the most important methods available for developing accurate information relating to the living bird. The study

of bird migration is the principal subject served, and in this field the contribution of banding data is invaluable, not only from its increase in our scientific knowledge, but also from an administrative viewpoint in the conservation of an important wildlife resource. By the study of banding records, new features in the periodic movements of birds are constantly being discovered. One of the most outstanding of these discoveries is the "flyway system", with its many migration routes used by North American migratory waterfowl and probably by most other species of migratory birds.

Important scientific studies of sex ratio, longevity, temperature control, plumage, avian psychology, homing instinct, and many other problems have been and are being made by the banding method. As a means of conducting precise investigations of the movements and behavior of our native birds, banding stands supreme. During the first 15 years after the work was taken over by the Survey in 1920, nearly 2,250,000 birds were banded, and the number of returns or recovery records reported in that period was nearly 200,000.

All kinds of native birds are studied by the banding method, and there are not many species of the entire North American list of 768 that have not been banded in at least small numbers, while the banded individuals of some species number tens of thousands. In addition to native birds, co-operators also are authorized to band European starlings, but Biological Survey bands are not available (except under special conditions) for use on pheasants or other introduced or hand-reared nonmigratory birds.

